Local Public Health Informatics:

Dashboards, Data & Decision-Making

Mike Dolan Fliss

MSW UNC, B.S. Comp Sci Duke
Epidemiology PhD at UNC-CH in progress

Public Health Informatics Manager
Orange County Health Department

**ORANGE COUNTY
HEALTH DEPARTMENT**
Improving health. Inspiring change.

Local Public Health Informatics

- **Backstory** (briefly): why informatics & how I got here
- Concrete **case examples** galore:
    - Dashboards, Partnerships, Ad Hoc
    - Current & Future Projects
- **Start here**:
    - Data
    - Nimble, low-cost or free tools & resources
    - Workforce development ideas

- Aiming as practical as possible with minimal theory. Let's keep it real.

The only "theory" slide:
5+Vs of good public health data

- **Volume**

Sufficient for trending, comparisons, county sampling, etc.

- **Velocity**

Recent (2009 to real-time) & frequent (2 years? Monthly? Hourly?)

- **Veracity**

Trustworthy. Data integrity of new/rarely used data is a challenge.

- **Variety**

Diverse. Speak to multiple aspects of PH. Enabled by partnerships!

- **+Voice! / Values. (Also VOIDS)**

Presentation and audience matter. Present stand-out, value-driven data. Avoid weeds.

Case Examples

- **Dashboards**: for surveillance and high level communication
  - *Example:* SAMH / Obesity County Health Dashboard
  - *Example:* Access to Care County Health Dashboard
  - *Example:* Custom Clinic / EMR dashboards

- **Partnerships**: for data sharing & coalition building
  - *Example:* YRBSS
  - *Example:* Farmer's Market EBT Program

- **Ad Hoc**: for responsive evaluation & precise implementation
  - *Example:* Dental Clinic Geographies
  - *Example:* Poverty Index Maps
  - *Example:* Smoke Free Public Places Rule

Child & Family Obesity Dashboard

Data points are the most current measures from multiple sources (available on request). All data points are statistically significant with normal margins of error and are best used for tracking trends and comparing against other populations.

Weight	Orange County			Trend		Compare to		
	Current	Target	Progress	Previous	Progress	Peer Avg	NC	US
Healthy weight (HS students)	77.0%	79.2%	⚠	74.0%	↑	NA	71.2%	71.8%
Healthy weight (adult)	46.8%	38.1%	🟢	48.4%	SAME	38.5%	34.9%	32.4%

Physical Activity	Orange County			Trend		Compare to		
	Current	Target	Progress	Previous	Progress	Peer Avg	NC	US
Recommended Exercise (adult)	44.5%	60.6%	🔶	52.9%	↓	49.5%	46.4%	51.7%
Recommended Exercise (HS kids)	47.7%	50%	⚠	42.7%	↑	48.1%	47.6%	50.5%

Physical Activity Recommendations: Adult- 30m+ moderate activity 5+d/w or 20+ vigorous activity 3+d/w; Kids - 60m+ 5+d/w

Nutrition	Orange County			Trend		Compare to		
	Current	Target	Progress	Previous	Progress	Peer Avg	NC	US
5/d+ Fruit & veggies (adult)	24.6%	29.3%	⚠	31.1%	↓	17.0%	20.6%	NA
5/d+ Fruit & veggies (kids)	10.0%	20%	🔶	7.4%	↑	17.8%	16.9%	NA
Breastfed babies (full+partial)	41.4%	40%	🟢	37.7%	↑	18.2%	24.1%	29.6%

Built Environment	Orange County			Trend		Compare to		
	Current	Target	Progress	Previous	Progress	Peer Avg	NC	US
Full service groceries (/10k)								
Parcels near public transportation								
Parcels near public rec facility								
Parcels near grocery stores								
Bike+sidewalk mi vs. street mi								

*These **Built Environment** indicators are current works in progress. They are more difficult to get than **Health Behavior** indicators, but often more directly influenced by BOH policy level interventions. Currently in collaboration with Orange County Planning and Community Transformation Grant contacts to create these.*

Chronic Disease	Orange County			Trend		Compare to		
	Current	Target	Progress	Previous	Progress	Peer Avg	NC	US
Cardiovascular disease (/100k)	185.7	161.5	⚠	NA	NA	214.7	241.8	249.8
Diabetes (adults)	5.2%	8.6%	🟢	5.1%	SAME	8.3%	10.9%	8.3%
Colorectal cancer (/100k)	11.2	10.1	⚠	12.7	↓	13.5	15.3	15.3

Orange County Population: 135,755

Adult Population: 107,925

High School Population: 6,184

KEY
- 🟢 Met Target (2020 NC/OC)
- ⚠ Better than / similar to peers
- 🔶 Worse than peers
- ↑↓ Positive trend
- ↑↓ Negative trend
- ↑↓ Neutral trend

Substance Abuse & Mental Health Dashboard

Data points are the most current measures from multiple sources (available on request). All data points are statistically significant with normal margins of error and are best used for tracking trends and comparing against other populations.

Substance Abuse	OC Scores			Trend		Compare to		
	Current	Target	Progress	Previous	Progress	Peer Avg	NC	US
HS Alcohol users	32%	26%	⚠	35%	↓	35%	34%	38%
Alcohol related crashes	6%	5%	🔶	5%	↑	5%	5%	9%
Illicit drug use self-report	9%	7%	⚠	7%	↑	8%	9%	9%
% Providers registered in CSRS	22%	(NEW MEASURE)		NA		53%	27%	NA
Controlled substance R_x rate #/person	1.4	NA		1.4		1.3	NA	NA
ER OD Visit rate (re: good sam law)	IN PROGRESS							
Non-fatal overdose rate	IN PROGRESS							
Overdose mortality rate	IN PROGRESS							

Tobacco Use	OC Scores			Trend		Compare to		
	Current	Target	Progress	Previous	Progress	Peer Avg	NC	US
Adult smokers	16%	13%	⚠	13%	↑	17%	22%	21%
HS Tobacco users	9%	15%	🟢	11%	↓	17%	23%	23%
2nd smoke in workplace	6%	0%	🔶	8%	↓	3%	8%	NA
Pregnant smokers	6%	7%	🟢	NA	NA	7%	11%	13%

NOTE: Orange County Smoke Free Public Places data detail on reverse

Mental Health	OC Scores			Trend		Compare to		
	Current	Target	Progress	Previous	Progress	Peer Avg	NC	US
Suicides (/100,000)	15.1	8.3	🔶	IN PROGRESS		11.55	12.1	12.4
Poor mental health days (/30)	2.5	2.8	⚠	IN PROGRESS		3.3	3.7	
Mental health visits to ER (/10,000)	IN PROGRESS	82.8		IN PROGRESS			106.5	

Treatment System	OC Scores			Trend		Compare to		
	Current	Target	Progress	Previous	Progress	Peer Avg	NC	US
Naloxone kits distribution								
Naloxone kit usage / refills								
Waitlist / demand of SA treatment centers...								

*These **Treatment System** indicators are current works in progress. We aim to operationalize both capacity (# sites, etc.) and utilization / need.*

Orange County Population: 135,755

Adult Population: 107,925

High School Population: 6,184

KEY
- 🟢 Met Target (2020 NC/OC)
- ⚠ Better than / similar to peers
- 🔶 Worse than peers
- ↑↓ Positive trend
- ↑↓ Negative trend
- ↑↓ Neutral trend

Access to Care Dashboard

Data points are the most current measures from multiple sources (available on request). All data points are statistically significant with normal margins of error and are best used for tracking trends and comparing against other populations.

Resources & Prevention	OC Scores			Trend		Compare to		
	Current	Target	Progess	Previous	Progress	Peer Avg	NC	US
Physicians (/10,000)	94.4	-	🟢	87.1	↑	42.0	22.1	22.0
Primary Care Physicians (/10,000)	23.7	-	🟢	32.1	↓	11.7	7.8	7.9
Dentists (/10,000)	9.6	-	🔺	10.1	↓	6.8	4.3	5.8
Well Child Participation Rate	82%	80%	🟢	72%	↑		IN PROGRESS	
Standalone/In Progress elements		NOTE						
>1mi from clinic/bus stop, no car	3,000	May include future measures of transportation. See reverse for map.						
Preventive care (%Pap, PC, etc.)	IN PROGRESS	Still collecting measures of preventive care.						
Charity care population	IN PROGRESS	UNC + Duke Orange County Charity Care program recipients.						

Affordability & Insurance	OC Scores			Trend		Compare to		
	Current	Target	Progess	Previous	Progress	Peer Avg	NC	US
Uninsured (<65)	16%	8%	🔺	14%	↑	18%	19%	17%
Uninsured (<65, <138% FPL)	37%	N A	🔻	37%	SAME	35%	32%	30%
Uninsured and...		NOTE						
Subsidy eligible	7,300	6,800 Adults 18-64 between 138-400% FPL + 500 Children <19 between 200-400% FPL						
Medicaid eligible, not enrolled	1,500+	Children <19, <200% FPL +unknown # of "churning" adults, -unknown # of undoc imm.						
Medicaid Ineligible (non-expansion)	7,500	Adults 18-86 under 138% FPL. NC: 630,000. See reverse for estimated breakdown.						

Health Literacy	OC Scores			Trend		Compare to		
	Current	Target	Progess	Previous	Progress	Peer Avg	NC	US
Basic prose illiteracy	9%			-		11%	14%	14%
Always understands doctor*	84%			-		-	83%	81%
Always understands discharge*	88%			-		-	86%	85%
Always understands medicine info*	69%			-		-	65%	64%
*Consider biases. Best used in comparison w/ other HCAHPS elements.								
Standalone/In Progress elements		NOTE						
% w/ Below Basic HL	IN PROGRESS	County data WIP. US (14%) is best measure of HL. See reverse for detail.						14%

Health Literacy measures are nearly all new indicators and do not yet have targets or trend data.

Orange County Population: 135,755

Adult Population: 107,925

High School Population: 6,184

KEY

🟢 Met Target (2020 NC/OC) ↑↓ Positive trend
🔺 Better than / similar to peers ↑↓ Negative trend
🔻 Worse than peers ↑↓ Neutral trend

Resources

Orange County has the **highest Physician and Primary Care Physician (PCP) per capita rates** in the state; however, PCPs have **trended down** in the last 10 years.

Even with strong county resources, transportation is a factor for many low-income individuals who **live outside the clinic/bus coverage area** [red/blue on map], 3,000 of whom have **no vehicle** [individuals living in the white region].
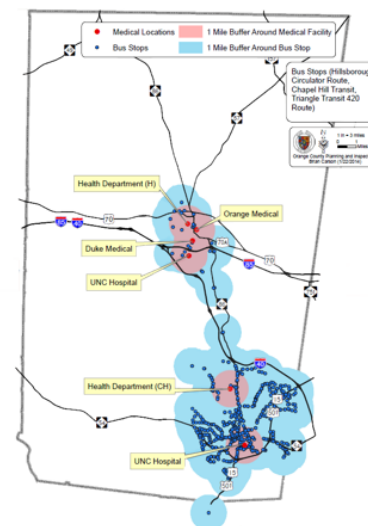
The disabled, elderly, and those on Medicaid qualify for free or reduced cost transportation in rural areas through Orange County Public Transportation (OPT). Those who do not qualify can request OPT pick-up/drop-off for a charge of $12.50 one direction.

Peer counties are Buncombe, New Hanover, Durham and Wake according to NC State Center for Health Statistics (NC SCHS) where county data is available, regional when not. Previous datapoint under Trend are from the previous relevant measurement point, not necessarily 1 year previous.

Affordability & Insurance

Orange County has a lower percent of uninsured by total population (16%), but the **same or more low-income uninsured** (9,145 or 37%) than peer (35%), state (32%) or national (30%) averages.

NCIOM Estimates the following approximate breakdown of the uninsured population:
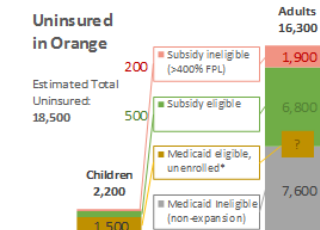
Health Literacy

Low Health Literacy is strongly tied with poorer health outcomes and increased cost. It is mediated by age, race, education and income.
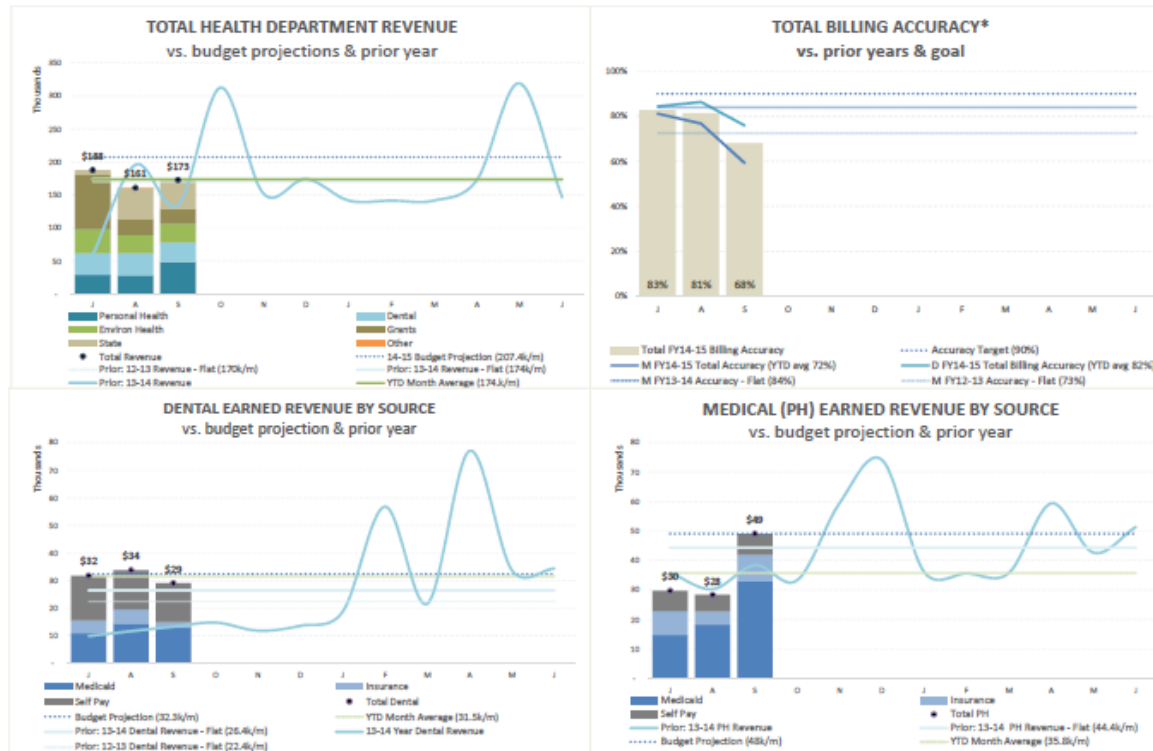
Basic HL is rudimentary prose comprehension and quantitative abilities, insufficient for many interactions with health information. **Below basic HL** is extremely low or non-existent comprehension.
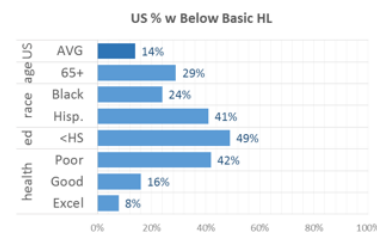
Increase HL by (1) increasing **patient** skills and abilities & (2) decreasing **provider** demand and complexity.

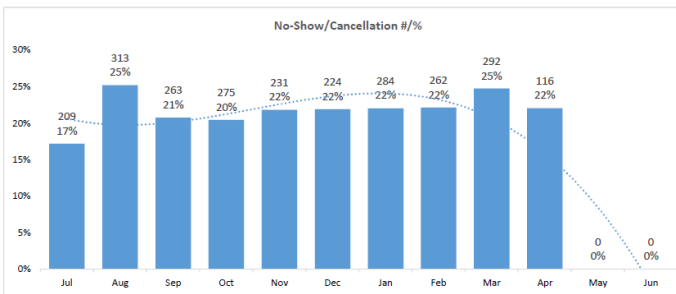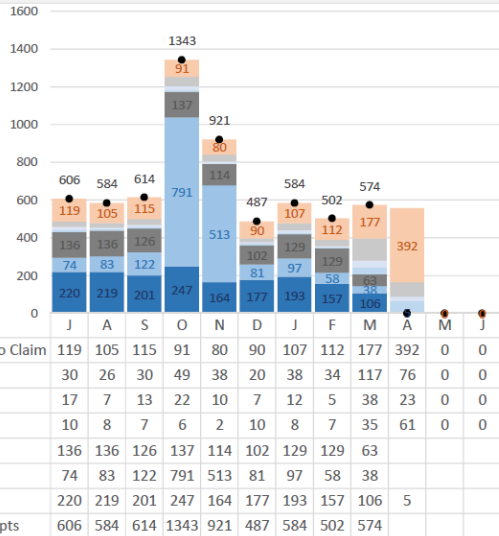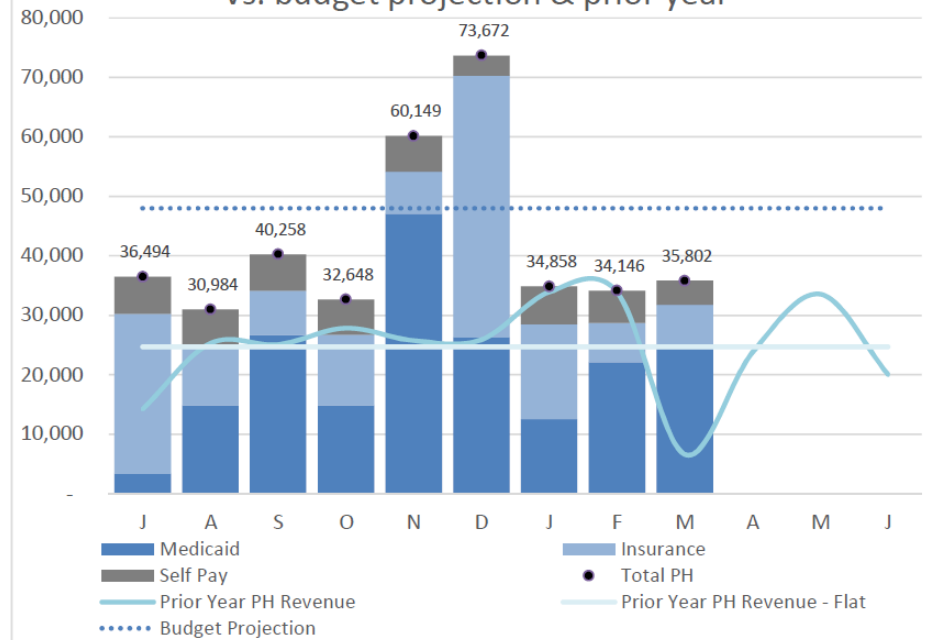**Modern EMRs** seem to be slow to develop true visually compelling, data-dense dashboards, but are making progress. We supplement by building our own.

Dashboards shouldn't just be interesting – they should motivate decision-making and be multi-layer (not just flat bar graphs).

By dumping our data from our EMR we're able to draft our own custom / proof of concept dashboards (hopefully eventually native to the EMR).
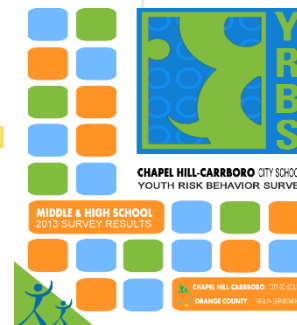
This higher level, data-driven approach to billing in our medical clinics supported nearly **doubling our clinic revenue** in a 12 month period.

- State and federal data **sources come and go** (e.g. FitnessGram).
- Sources may or may not sample small enough to yield **county results** (e.g. YRBS, BRFSS).

Youth Risk Prevalence Table:

automobile/transportation safety ● school safety ● dating violence ● mental health

"SAME" = within 3.3%

Topic	%	1 in X	#/30		High School Students v Previous	%	1 in X	#/30		Middle School Students v Previous
Automobile / Transportation Safety										
Not always wears seatbelt as car passenger	36%	1 in 3	11		BETTER -1	27%	1 in 4	8		NEW Q
Drove after drinking	9%	1 in 11	3		SAME				NOT ASKED	
Drove after smoking marijuana	12%	1 in 9	4		SAME				NOT ASKED	
Drove while texting	23%	1 in 4	7		NEW Q				NOT ASKED	
Not always wears helmet when bicycling				NOT ASKED		67%	1 in 1	20		NEW Q
Not always wears helmet when rollerblading/skateboarding				NOT ASKED		84%	1 in 1	25		NEW Q
School Safety										
Felt unsafe, didn't go to school	6%	1 in 17	2		SAME	1.6%	1 in 62	0		BETTER -2
Threatened or injured by weapon on school prop.	4%	1 in 24	1		BETTER -1				NOT ASKED	
Had property stolen or damaged	19%	1 in 5	6		WORSE +1	20%	1 in 5	6		BETTER -5
Agrees violence is a problem	18%	1 in 6	5		BETTER -2	33%	1 in 3	10		WORSE +1
Disagrees school has clear rules & consequences for b	13%	1 in 8	4		SAME	8%	1 in 12	3		BETTER -1
Weapon Carrying										
Carried a weapon (HS:30d; MS:ever)	9%	1 in 11	3		NEW Q	8%	1 in 12	2		BETTER -1
Carried a weapon on school prop.	4%	1 in 24	1		BETTER -1				NOT ASKED	
Physical Fights										
Ever been in a fight				NOT ASKED		28%	1 in 4	8		BETTER -2
In a fight on school property	7%	1 in 14	2		SAME				NOT ASKED	
In a fight, injured, required treatment	4%	1 in 28	1		BETTER -1	4%	1 in 28	1		
Bullying										
Been bullied on school property	17%	1 in 6	5		WORSE +1	37%	1 in 3	11		
Been electronically bullied (email, chat, text, etc.)	14%	1 in 7	4		NEW Q	17%	1 in 6	5		
Seen bullying at school	60%	1 in 2	18		WORSE +4	80%	1 in 1	24		
Been teased / name called b/c of perceived LGBT	11%	1 in 9	3		NEW Q	16%	1 in 6	5		
Agrees school has harassment & bullying problem	32%	1 in 3	10		SAME	50%	1 in 2	15		
Dating Violence										
Been forced into sexual acts by dating partner	6%	1 in 16	2		NEW Q				NOT ASKED	
Physically hurt by dating partner on purpose	5%	1 in 21	1		NEW Q				NOT ASKED	
Been forced to have sexual intercourse against will	7%	1 in 15	2		SAME				NOT ASKED	

CHAPEL HILL-CARRBORO CITY SCHOOLS
YOUTH RISK BEHAVIOR SURVEY

MIDDLE & HIGH SCHOOL
2013 SURVEY RESULTS

Carrboro Farmers' Market
EBT / Food Outreach Report as of August 21, 2013 – Margaret Krome-Lukens, EBT & Food Outreach Coordinator

We have used $4271 of our original Market Match grant from UNC Health Care.
With our recent $5,000 renewal (great job, Erin!), we have $5729 of Market Match funds remaining.
Thanks to Mike Fliss, Health Informatics Director at the OC Health Department, for help crunching these numbers:

Customers: So far in 2013, 60 EBT customers made 321 visits to the Info Booth[i]. Nine customers accounted for over 60% of these visits. While 28 people have only stopped by once, 27 of those visits were new customers in July/August, so they may still be coming back. The take away: our loyal EBT customer base is small, but has the potential to grow a lot if we can do a good job with customer retention. Signage is big in customers' experiences.

Money: [ii]

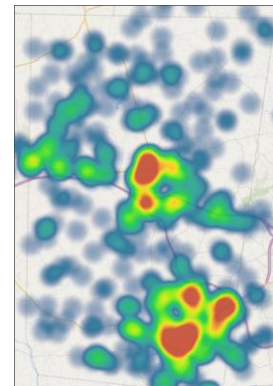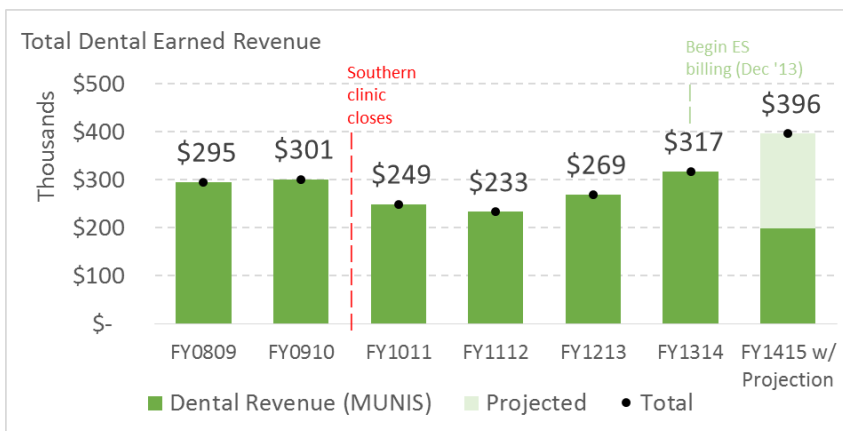|	
$15.41	average spent on EBT card per infobooth visit
$6.48	average market match given per infobooth visit
$21.89	average food dollars to farmers per visit
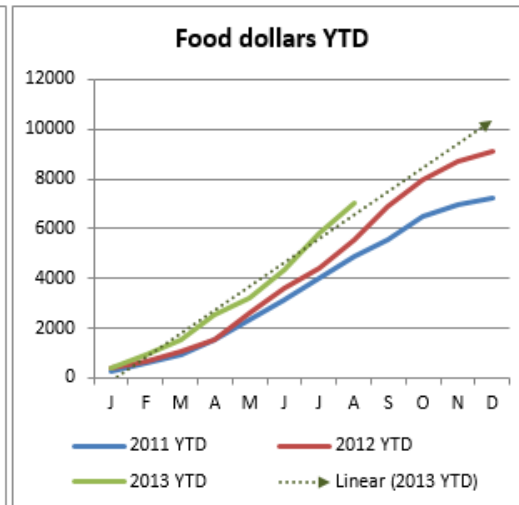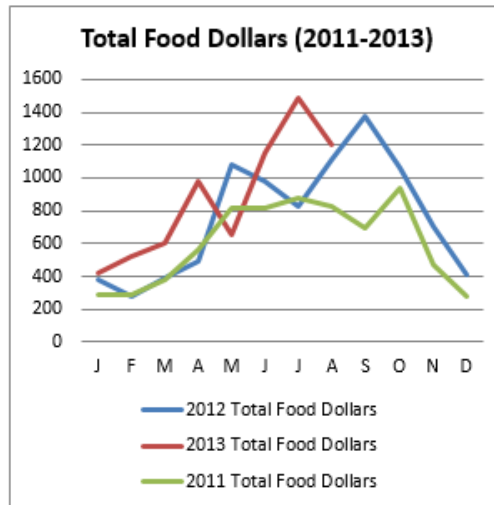
Market Match Surveys
We collected survey results from 28 people. 68% got to Market in a car; 64% live within 3 miles of Market. 79% said that Market Match was one of the reasons they were visiting the Market that day; the info booth was the most common way for them to have heard about Market Match (39%); fliers and email/website were also common (25% each). Much gratitude was expressed for the Market Match program.

- Local datasources may necessarily **only exist at the county or sub-county level** and need custom analyses to bring lessons to bear (CHCCS Farmers Market)

- **Partnerships are KEY**, tying good public health data together and multiplying impact of both data and initiatives. OCHD works with dozens of state and local data partners.
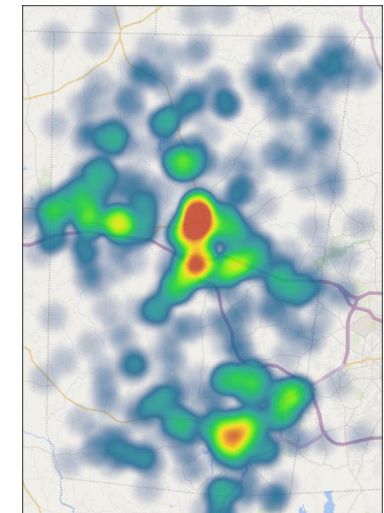
Dental & Financial Impact				
	Unique Patients	Visits	Procedures	Revenue
Baseline: FY09-10	1,495	3,024	12,868	$301,000
Current: FY13-14	2,407	5,278	17,270	$395,000
Change	**+912**	**+2,254**	**+4,402**	**+94,000**
	+61%	+75%	+34%	+31%

Geographic Distribution					
	# Mappable	% Mappable	Nearest Whitted	Nearest Southern	Whitted %	Southern %
Baseline: FY09-10	1,222	82%	537	684	44%	56%
Current: FY13-14	2,404	100%	1556	848	65%	35%
Change	**+1,182**	DIFFERENCE:	**+1,019**	**+164**	DIFFERENCE	DIFFERENCE
	+97%	+18%	+190%	+24%	+21%	-21%

Total Dental Earned Revenue

Southern clinic closes

Begin ES billing (Dec '13)

$295 $301 $249 $233 $269 $317 $396

FY0809 FY0910 FY1011 FY1112 FY1213 FY1314 FY1415 w/ Projection

■ Dental Revenue (MUNIS) ■ Projected ● Total

BEFORE…

AFTER
(distribution shifts north)

Responsive Public Health Informatics includes business intelligence skills – what's the impact of closing a dental clinic to work on QI?
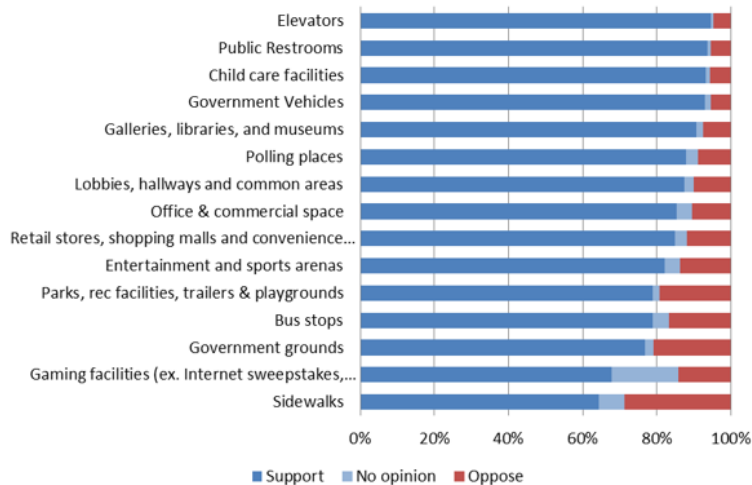
Distribution shifts slightly north. **Total dentistry** nearly **doubles**. **Revenue** on track to **increase 30%**.
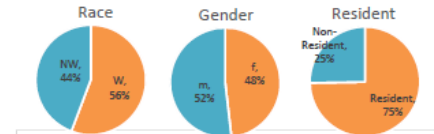
253 Surveyed to date
5 # SRT Deployments
9 Locations

Public Support By Smoking Location

Overall, all locations received clear support significantly beyond a majority. All but government grounds and sidewalks received 80% support or greater, with many receiving 90% support.

Respondant breakdown

Race — NW, 44% / W. 56%
Gender — m. 52% / f, 48%
Resident — Non-Resident, 25% / Resident, 75%

City	Location	Signage?	Receptacles?	# observed	% observed smoking	Units of garbage
CH	Chapel Hill Courthouse	✗	n	345	2%	332
CH	Southside Bus Stop	✗	n	15	40%	45
CH	Weaver Street Bus Stop	✓	n	60	0%	141
CH	Westside of N. Columbia St Bus Stop	✗	n	6	17%	70
CH	Eastside of N. Columbia St Bus Stop	✓	n	8	13%	65
CH	Northside of W. Franklin St Bus Stop	✓	n	10	0%	25
CH	Southside of W. Franklin St Bus Stop	✗	n	2	0%	15
CH	Southside of E. Franklin St Bus Stop	✓	n	22	9%	30
H	Hillsborough County Courthouse	✓	n	33	3%	45
H	Gold Park	✓	n	48	2%	12
H	Triangle Sportsplex	✓	y	37	0%	47

Responsive Public Health Informatics means **evaluating** our initiatives and being wise about **implementation**.

Pre-Rule surveys drove board discussion of rule. **Post-Rule surveys** and data collection drive our implementation and evaluation plans.
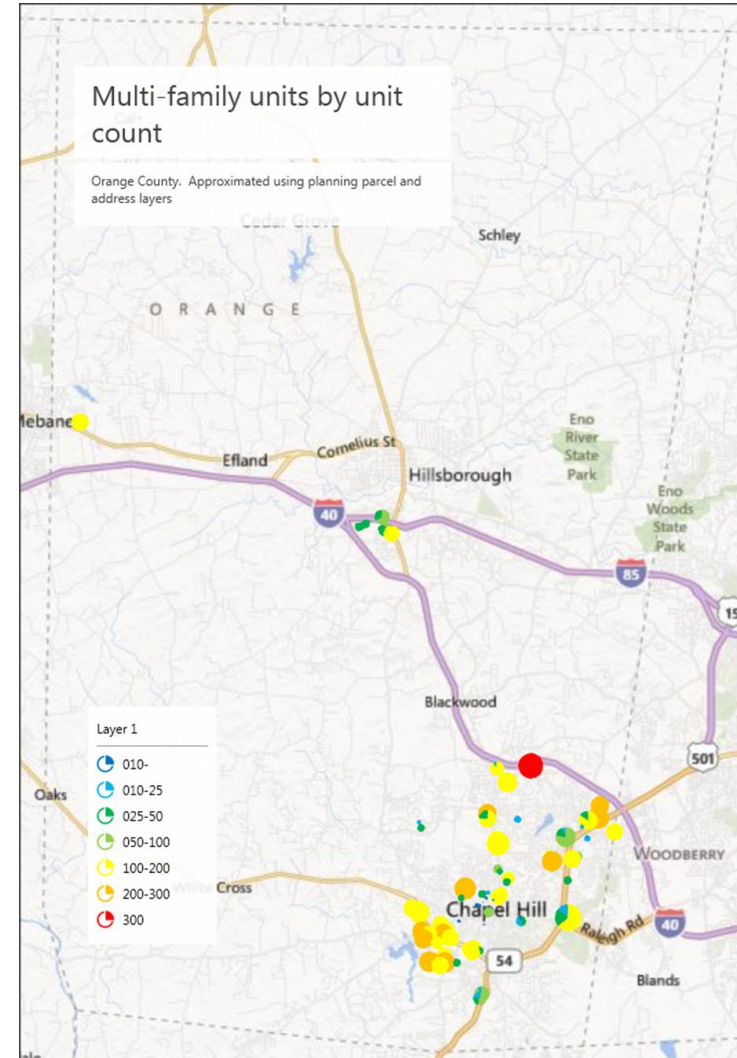
Multi-Family Housing by Unit Count

Total Units: 11,471
Total Owners: 309

	Owner	Approx Unit Count	% of Total	Rolling %
	ERROR	742	6%	TOSS
1	GLEN LENNOX DELAWARE, LLC	442	4%	4%
2	CHAPEL HILL RESIDENTIAL RETIREMENT, CENTER INC	389	3%	7%
3	RP BARNES LLC	374	3%	11%
4	AIMCO SHADOWOOD LLC STRATEGIC, PROPERTY TAX	336	3%	13%
5	GS VILLAGES CHAPEL HILL LLC	322	3%	16%
6	PNGA LLC	298	3%	19%
7	NORTH ESTES LLC	296	3%	21%
8	KIWA LLC	288	3%	24%
9	CHAPEL HILL HOUSING, AUTHORITY	273	2%	26%
10	LANDMARK AT CHELSEA COMMONS LP	267	2%	29%
11	SH POOL A SUNSTONE, LLC	261	2%	31%
12	SOUTHERN VILLAGE, APARTMENTS LLC	251	2%	33%
13	PEG CHAPEL HILL I LLC	248	2%	35%
14	POINTE AT CHAPEL HILL APARTMENTS, LLC	244	2%	37%
15	AUTUMN WOODS APARTMENTS MANAGER LLC	240	2%	39%
16	WESTDALE POPLAR PLACE LP	230	2%	41%
17	WALDEN GREENFIELDS, ASSOCIATES	229	2%	43%
18	ACC GF III CHAPEL VIEW, LLC	226	2%	45%
19	CAJF ASSOCIATES, LLC	210	2%	47%
20	CH REALTY IV NOTTING HILL, LLC	206	2%	49%
21	BH EAST OF NORTH LLC	198	2%	51%

Example of data-driven **implementation:** using planning data on addresses and owners to target highest impact **multi-family housing** for **smoke-free efforts.**


Multi-family units by unit count

Orange County. Approximated using planning parcel and address layers

Layer 1
- 010-
- 010-25
- 025-50
- 050-100
- 100-200
- 200-300
- 300

Child Poverty: Orange County

ORANGE COUNTY HEALTH DEPARTMENT
Improving health. Inspiring change.

The number and percent of children in poverty has increased in both the county and the state. 17% of children (4,627) in Orange County are in poverty as of 2011 (an increase of 7% and +2,343 children from 2001).

The number and percent of children enrolled in Medicaid has increased in both the county and the state. 25% of children (7,053) in Orange County are enrolled in Medicaid as of 2011 (an increase of 8% and +2,985 children from 2000).

Children in Poverty
% in North Carolina, 2011, 25%
2001, 16%
2001, 9%
% in Orange, 2011, 17%
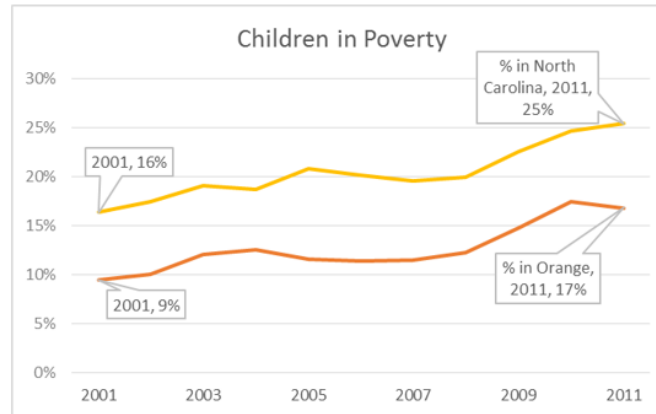
The number and percent of students on free or reduced lunch has increased in the last five years, both county-wide and in both school districts. 32% of children (6,177 in 2010) in Orange County's two districts receive free or reduced lunch as of 2011 (an increase of +6% or +1,569 students).

Responsive Public Health Informatics means presenting data in a **digestible** format – for high level trends, a large report is rarely needed. This is the first page of a 1 page report that drove deeper data requests to poverty in Orange County.

Data is sorted and color coded for ease of digestion and high **data to ink ratio**.

		Orange			NC		
		Current	Past	Change	Current	Past	Change
increase	Children in poverty	17%	9%	+7%	25%	16%	+9%
increase	Children on Medicaid	25%	17%	+8%	41%	28%	+13%
increase	Students in free & reduced lunch	32%	26%	+6%	56%	49%	+8%
increase	Unemployment	6%	4%	+2%	10%	6%	+3%
increase	low birthweight births (minority)	12%	11%	+1%	11%	13%	-3%
increase	low birthweight births (all)	9%	7%	+2%	9%	9%	same
decrease	foster care children reunified w/in 12mo	28%	57%	-29%	54%	59%	-4%
increase	Uninsured Children, <200% poverty	20%	7%	+13%	11%	20%	-9%
decrease	Uninsured Children, all incomes	9%	13%	-4%	8%	13%	-5%
increase	HS four-year graduation rate	88%	76%	+12%	80%	70%	+10%
decrease	teen pregnancy rate (all)	18.0	19.0	-1.0	30.0	36.0	-6.0
decrease	teen pregnancy rate (minority)	21.0	28.0	-7.0	41.0	51.0	-10.0
decrease	child abuse / neglect investigation rate	33.9	51.1	-17.2	56.1	58.0	-1.9
increase	no recurrence of maltreatment	100%	93%	+7%	93%	93%	same
decrease	Juvenile delinquency rate	13.2	22.5	-9.3	24.7	31.5	-6.8

Finding small neighborhoods:

Goals:
- Attempt to adjust for population density
- Use multiple data layers for assurance
- Drill to neighborhoods with distinct types if possible

- **What is it? :**

   An aggregate indicator calculated for every **1/4 mile block** with >30 residential addresses of any type.

- Datasources:

   (1) **residential structure type** from Land Records/GIS

   (2) **active housing choice vouchers** from housing

   (3) **children on medicaid** from DHHS

   (4) **clinic patients** from the health department.

- Roughly follows school boundaries

No individual address information is represented on this map. *Blue: Schools.*

*Orange-Red-**Black** color ramp:*
Neighborhoods of increasing Poverty Index. Size is number of residential addresses within neighborhood
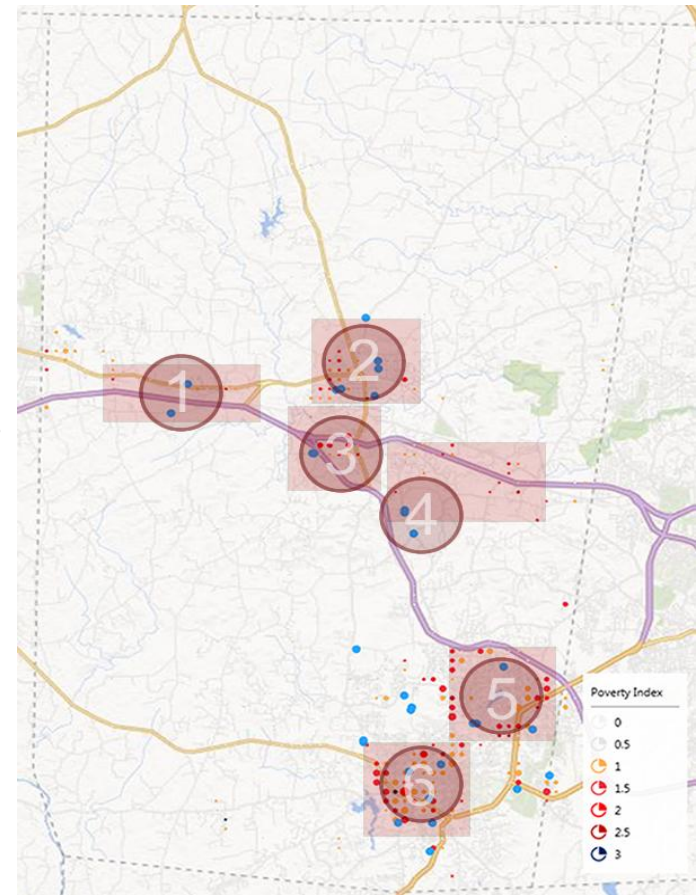
Current and Future Projects

- Working on a very different **Community Health Assessment** – not 300 pages, more visual, more data digestible
- Regional Public Health **GIS collaborative**
- **Clinical program dashboards** – so nurses can tie their work to the state of the counties health.
- Family Success Alliance **child poverty initiative** – lots of partners, including other departments and schools.
- As always, internal quality improvement

Tools

Nice…but $$$	Free / low-cost, nimble, no contracts.
Tableau is great … but may run in the tens of thousands.	**Good ole' Excel (2013)**: Can make maps, dashboards, custom databases. *Keywords: PowerMap / PowerBI, PowerPivot, PivotTables.*
SAS for giant datasets or deep statistics is powerful… but pricey!	**Consider R**! It's free, open source, and as or more powerful. *And did I mention modern Excel has new tools for giant datasets?*
ArcGIS is the mapping tool of choice… but licenses can be a premium.	**QGIS** is a free, open-source mapping tool and works just like ArcGIS *Online tools like NC-HIP have lots of maps already.*

Data

- **Start at home**! Clinical, revenue and program data. Traditional activities of public health.
- **Traditional**: American Communities Survey FactFinder, for instance
- **State Center for Health Statistics** : Make requests. Birth and death data (including geo-codable addresses*), for instance, are "yours" but live in Raleigh.
- **Other departments & divisions:** Planning, environmental health, aging, etc.
- **Partnerships**! Try neighboring hospitals, medicaid / insurance partners, nearby univerisities, schools.
- **Newspaper**: Many articles are just reprints of studies or findings. Go from article→paper→ free online dataset. Afford

And more! Try not to get overwhelmed, these are floodgates. ☺

Tricks…
I mean <u>Organizational Strategies!</u>

Can't always start with **creating a new position from scratch**. Maybe also try:

- **Hire existing positions** with basic informatics in mind(or at least evalution, BI & data use). Build a culture that supports informatics.
- Explicitly **refactor old positions** if they start to max out (how I got here)
- Test out positions with **consultants or temp staff** (also happened to me)
- **Collaborate** with other departments or counties for shared hires.
- **Think bigger**: Go regionally and nationally for support!

And that's my segue!

Thanks!

Mike Dolan Fliss
MSW UNC, B.S. Comp Sci Duke
Epidemiology PhD at UNC-CH in progress
Public Health Informatics Manager
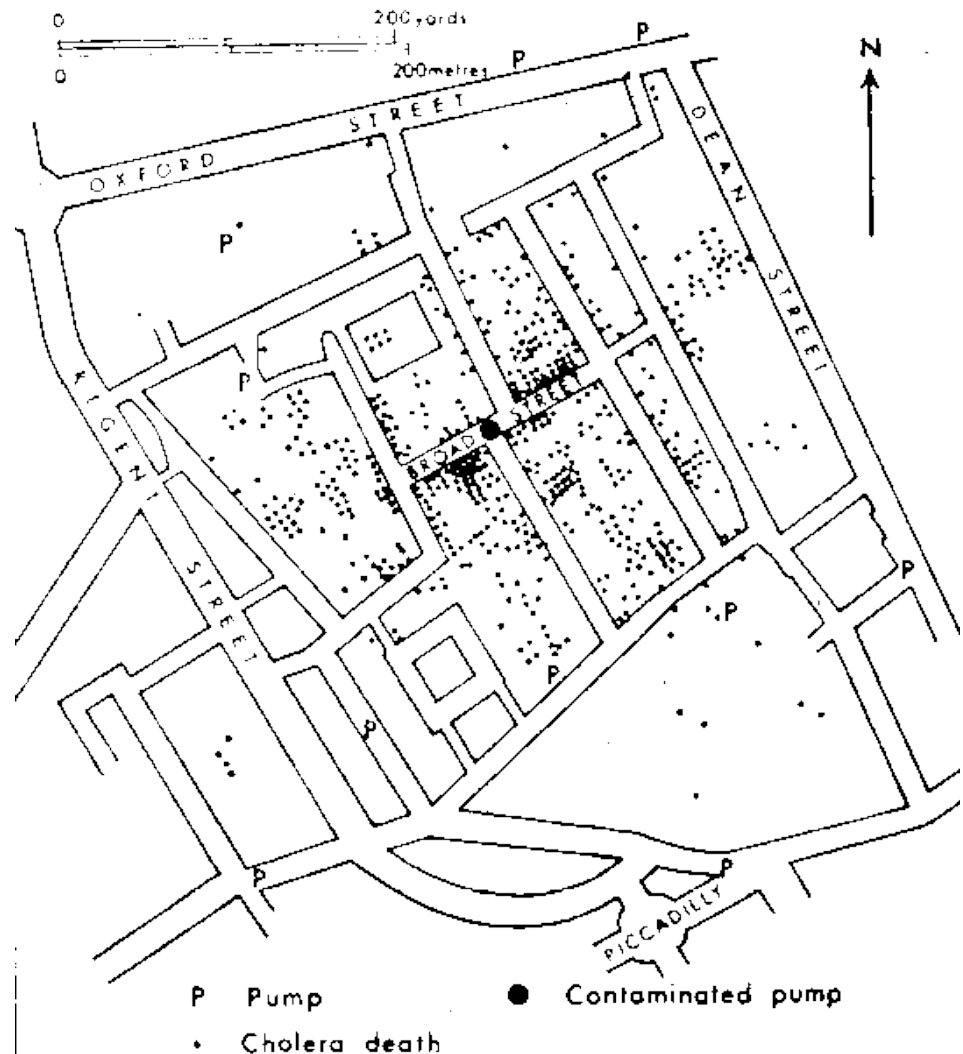Orange County Health Department
mfliss@orangecountync.gov

QUESTIONS?
AFTER! ☺

BONUS:

The "classic" Public Health Map
(that everyone trots out)

Dr. John Snow's 1854 map of deaths from
Cholera v. water pumps in London

P   Pump   ● Contaminated pump
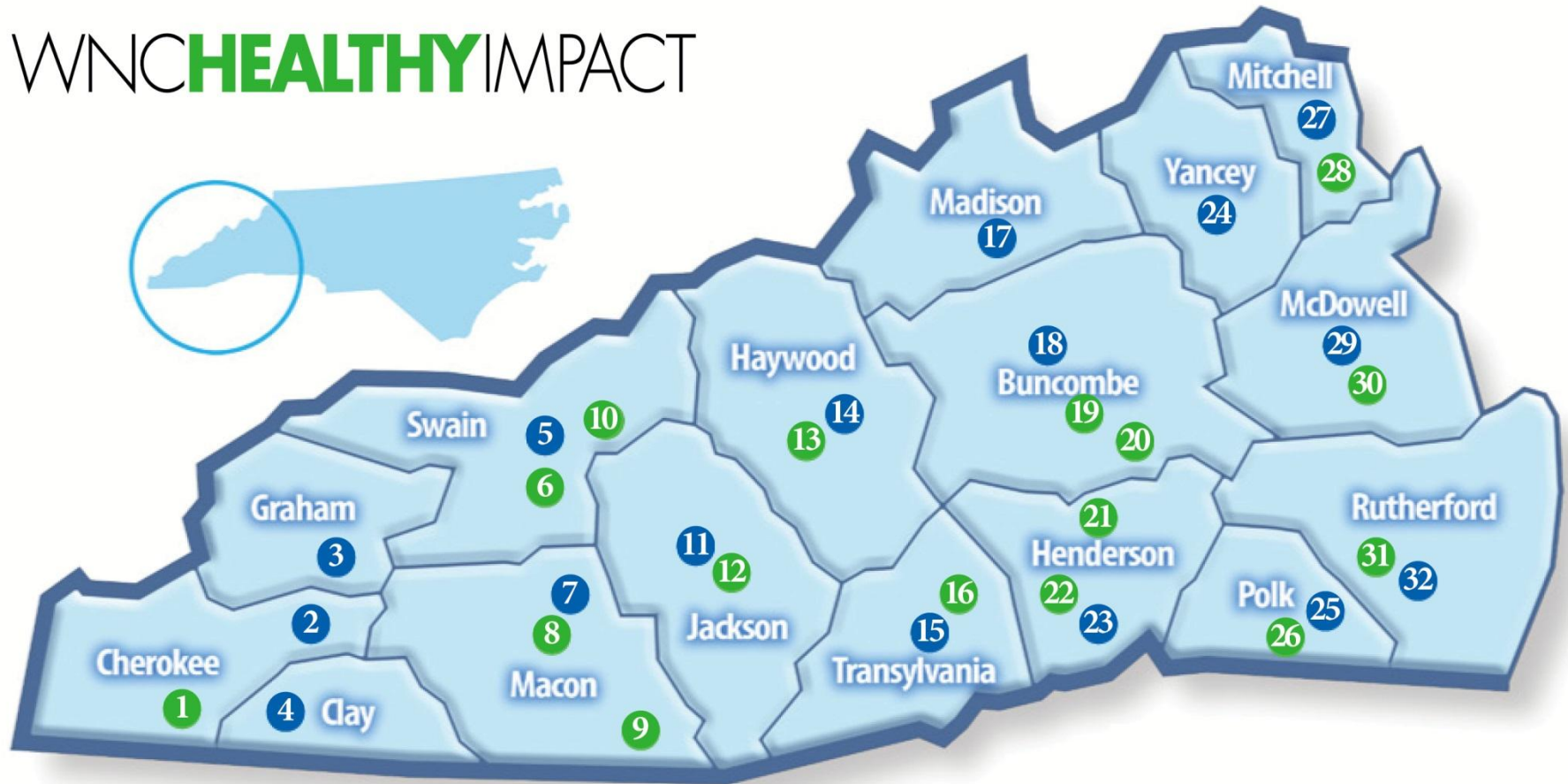
• Cholera death

WNC**HEALTHY**IMPACT 2.0

State Health Director's Conference

January 22, 2015

Heather Gates, MPH
Executive Director

WNC HEALTH NETWORK
Providers Working Together

WNC**HEALTHY**IMPACT

Mitchell
27
28

Yancey
24

Madison
17

McDowell
29
30

Haywood
14
13

Buncombe
18
19
20

Rutherford
31
32

Swain
10
5
6

Graham
3

21

Henderson
22
23

Polk
25
26

11
12

Jackson
7

Macon
8
15

Transylvania
16

Cherokee
2
1

4 Clay

9

1 Murphy Medical Center
2 Cherokee County Health Dept.
3 Graham County Dept. of Public Health
4 Clay County Health Dept.
5 Swain County Health Dept.
6 Swain County Hospital
7 Macon County Public Health Center
8 Angel Medical Center
9 Highlands-Cashiers Hospital

10 Cherokee Indian Hospital and Health & Medical Division
11 Jackson County Dept. of Public Health
12 Harris Regional Hospital
13 Haywood Regional Medical Center
14 Haywood County Health Dept.
15 Transylvania County Department of Public Health
16 Transylvania Regional Hospital

17 Madison County Health Dept.
18 Buncombe County Health and Human Services
19 Mission Hospital
20 CarePartners Health Services
21 Park Ridge Health
22 Margaret R. Pardee Memorial Hospital
23 Henderson County Department of Public Health

24 Toe River Health District– Yancey
25 RPM Health District– Polk
26 Saint Luke's Hospital
27 Toe River Health District– Mitchell
28 Blue Ridge Regional Hospital
29 RPM Health District– McDowell
30 McDowell Hospital
31 Rutherford Regional Health System
32 RPM Health District– Rutherford
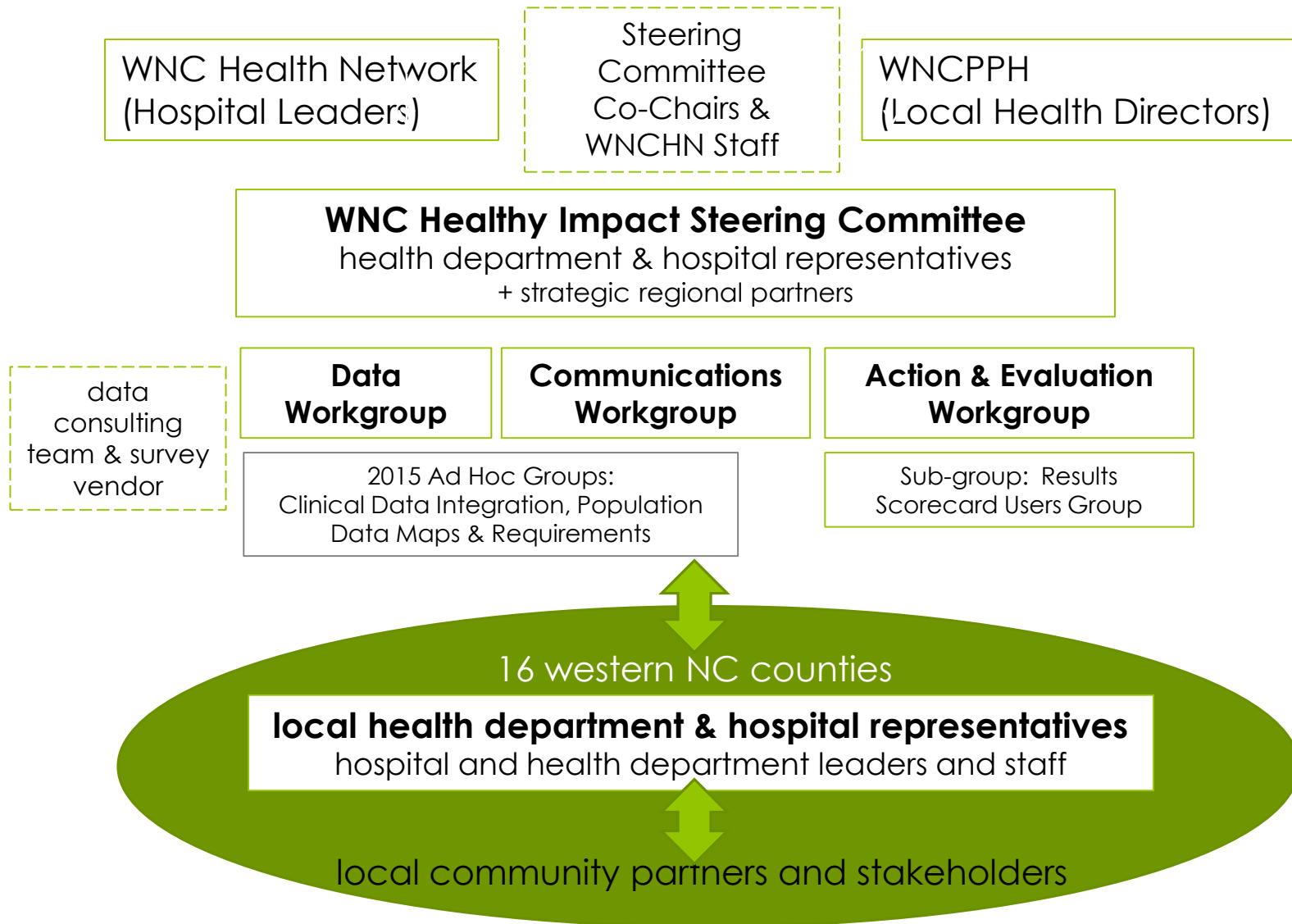
WNCHEALTHYIMPACT

Our Goals

- Enhance partnerships
- Improve efficiency, quality and standardization *(data & reporting)*
- Encourage strategic investment
- Catalyze and coordinate action
- Monitor results
- Promote accountability

With a vision of improving community health for all of western North Carolina

WNC**HEALTHY**IMPACT

Why are we doing this?

Compliance (for some)

good business strategy

strengthen organizations & partnerships

alignment & collaboration + best practice to address priority health issues

Collective Impact on **HEALTH** in WNC

WNCHEALTHYIMPACT

2.0

| WNC Health Network (Hospital Leaders) | Steering Committee Co-Chairs & WNCHN Staff | WNCPPH (Local Health Directors) |

WNC Healthy Impact Steering Committee
health department & hospital representatives
+ strategic regional partners

data consulting team & survey vendor

| **Data Workgroup** | **Communications Workgroup** | **Action & Evaluation Workgroup** |

2015 Ad Hoc Groups: Clinical Data Integration, Population Data Maps & Requirements

Sub-group: Results Scorecard Users Group

16 western NC counties

local health department & hospital representatives
hospital and health department leaders and staff

local community partners and stakeholders

Community Health Improvement Process

- Compile Health-related Data – Needs and Assets
- Analysis and Interpretation
- Prioritization of Needs
- Collaborative Action Planning
- Act on what's important and **Evaluate**

Engaged Partners & Community

Modified version of the RWJF Take Action Cycle
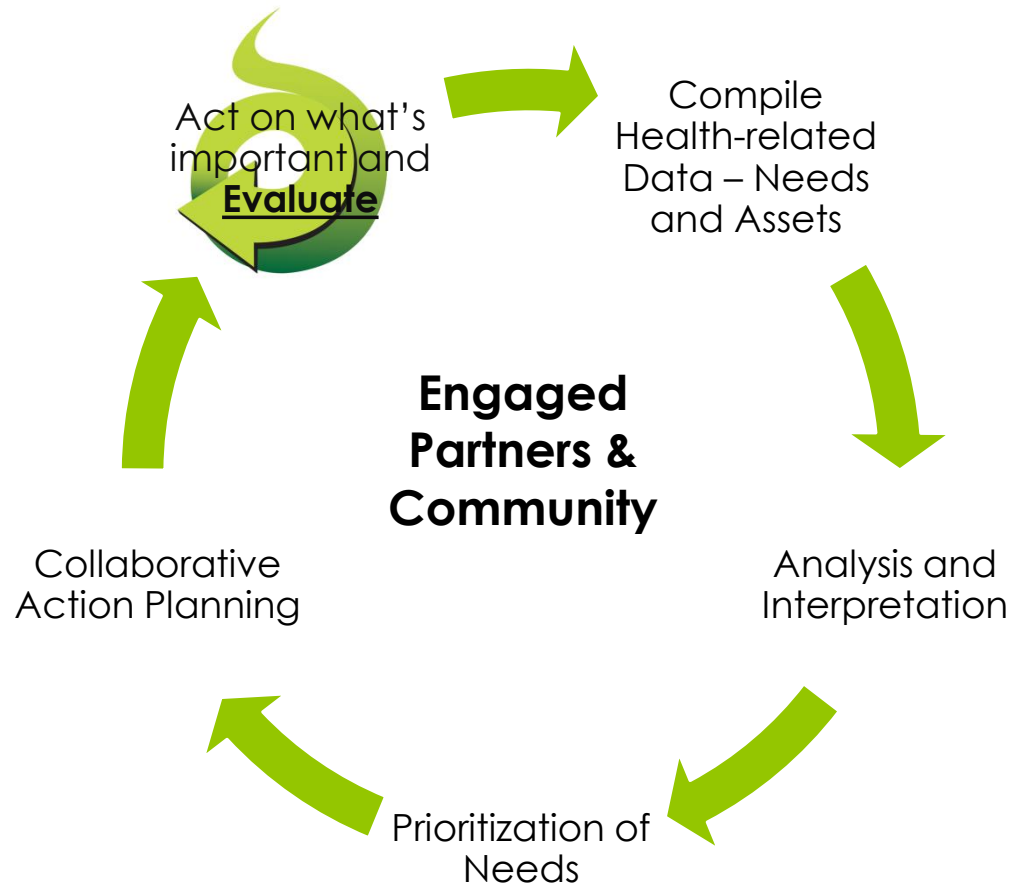
Community Health (Needs) Assessment

Regionally

- Collaborative infrastructure & support
- Core set of secondary and primary data
- Local and regional data reports
- CHA/CHNA Templates
- Communication tools

Locally

- Local CHA Team
- Data interpretation, health resource inventory
- Additional data collection
- Priority setting
- Community engagement
- Final reporting

"If you can't talk about it, you can't change it."

*From the Book "Influencer: The New Science of Leading Change",
Grenny, Patterson, Maxfield, McMillian, & Switzler, 2013*

Results-Based Accountability™?

- A disciplined way of thinking and taking action to help improve lives in our communities
- Starts with ends and works back to means
- Plain language

Where to learn more…

- "Trying Hard is Not Good Enough" Mark Friedman
- www.raguide.org
- www.resultsaccountability.com

Population accountability

About the well-being of WHOLE POPLUATIONS:

- Communities, Cities, Counties, States, Nations

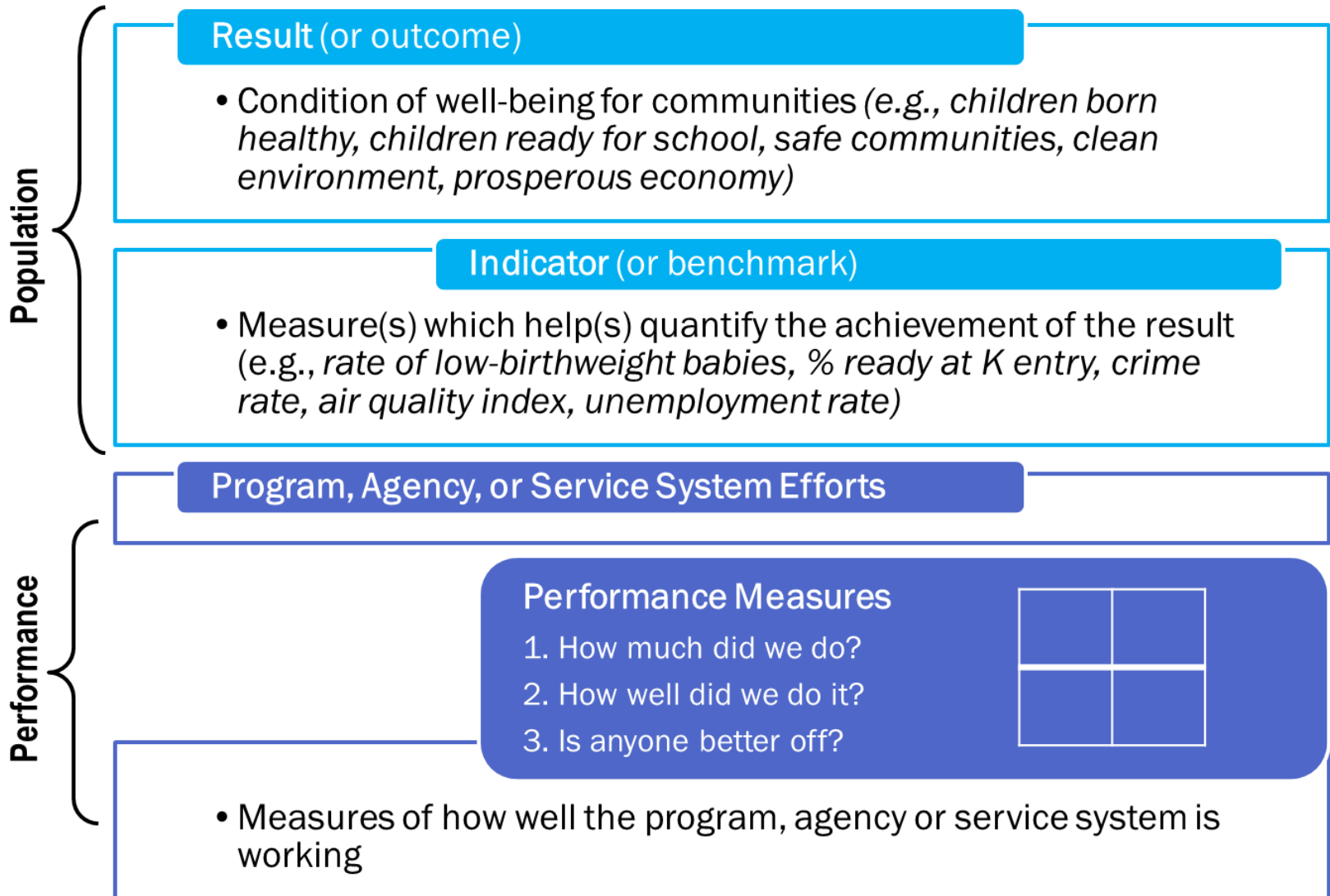Collective Impact Community Health Assessment Community-level Report Cards

Performance accountability

About the well-being of CUSTOMER POPULATIONS:

- Programs
- Agencies
- Service systems

Ex. Specific strategy or programs within a community action plan or organization

PUTTING POPULATION & PERFORMANCE TOGETHER

Population

Result (or outcome)

- Condition of well-being for communities *(e.g., children born healthy, children ready for school, safe communities, clean environment, prosperous economy)*

Indicator (or benchmark)

- Measure(s) which help(s) quantify the achievement of the result (e.g., *rate of low-birthweight babies, % ready at K entry, crime rate, air quality index, unemployment rate)*

Performance

Program, Agency, or Service System Efforts

Performance Measures

1. How much did we do?
2. How well did we do it?
3. Is anyone better off?

- Measures of how well the program, agency or service system is working

www.WNCHealthyImpact.com
www.wnchn.org

Heather Gates

heather.gates@wnchn.org

(828) 200-1291 (cell)

(828) 418-5034 (office)

Public Health Informatics Workforce Development at CDC

Bradley Biggers, MPH

Centers for Disease Control and Prevention
Public Health Informatics Fellow

2015 NC Health Directors Conference

CDC

Agenda

❑ **Definition of public health informatics (PHI)**

❑ **PHI workforce development at CDC**

❑ **PHI fellowships**

Public Health Informatics

CDC's Definition:

❑ The systematic application of knowledge about natural and artificial systems that store, process and use information for improving population health.

Public Health Informatics

CDC's Definition:

❑ **The systematic application** of knowledge about natural and artificial systems that store, process and use information for improving population health.

Public Health Informatics

CDC's Definition:

❑ The systematic application **of knowledge about natural and artificial systems** that store, process and use information for improving population health.

Public Health Informatics

CDC's Definition:

❑ The systematic application of knowledge about natural and artificial systems **that store, process and use information** for improving population health.

Public Health Informatics

CDC's Definition:

❑ The systematic application of knowledge about natural and artificial systems that store, process and use information **for improving population health.**

Workforce Development

Fellowships:

❑ **Public Health Informatics Fellowship Program (PHIFP)**

❑ **SHINE* fellowships:**

- Applied Public Health Informatics Fellowship (APHIF)
- Informatics Training in Place Program (I-TIPP)
- Health Systems Integration Program (HSIP)
  Not strictly an informatics program

Public Health Informatics Fellowship Program (PHIFP)

Duration: 2 years (3rd year practicum available)

Host site: CDC center

Fellow: Master's/PhD & 3 years PHI experience

Funding: CDC host site

Deliverables:

- Host center project
- Evaluation project
- Technical assistance project (Info-Aid)

PHIFP Info-Aids

❑ Short-term technical assistance projects

❑ 140 hours, including 40 hours on-site

❑ Provides requesting agency with problem solving, technical skills, and learning opportunity

❑ Provides fellow with experiential learning

❑ Minimal cost to requesting agency: Fellow's travel, hotel, and meals

❑ 3, 6, and 12-month follow-up

❑ Request at phifp@cdc.gov

Applied Public Health Informatics Fellowship (APHIF)

Duration: 1 year

Host site: State/local public health agency with two PHI mentors

Fellow: Master's/PhD level, geared toward recent graduates

Funding: CDC Cooperative Agreement

Deliverables:
- Host agency project(s)
- APHIF trainings

Informatics Training in Place Program (I-TIPP)

Duration: 1 year

Host site: State/local public health agency with PHI projects and an available mentor with 3+ years PHI experience

Fellow: Employed at least 1 year at host agency, BS in Public Health or IT

Funding: CDC Cooperative Agreement

Deliverables:

- Host agency project(s)
- I-TIPP trainings

Health Systems Integration Program (HSIP)

Duration: 1 year

Host site: State/local public health agency with two public health mentors, one or more well-defined integration project

Fellow: Master's/PhD. & 4 years public health experience

Funding: CDC Cooperative Agreement

Deliverables:

- Host agency project(s)
- HSIP trainings

Fellowship How-To's

Hire a fellowship graduate:

- Send job announcements to Herman Tolentino
  htolentino@cdc.gov

Apply to host an APHIF, I-TIPP, or HSIP fellow

- www.shinefellows.org
- APHIF: October-November
- I-TIPP: November-March
- HSIP: October-December

Request an Info-Aid

- phifp@cdc.gov

In the Pipeline…

Thank you!

Questions?

For more information please contact Bradley Biggers

E-mail: bbiggers@cdc.gov
Telephone: 404-639-1861
1600 Clifton Road NE, MS A-19, Atlanta, GA 30333

http://www.cdc.gov/phifp

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.